WHAT IS CLAIMED IS:

1. A surface acoustic wave filter comprising series-arm resonators and parallel-arm resonators that are connected in a ladder-like structure, each having an interdigital transducer formed on a piezoelectric substrate, and at least one of the series-arm resonators having a different static capacitance from the other series-arm resonators,

wherein at least one of the series-arm resonators except the series-arm resonator located at the first stage in the ladder-like structure has a lower average resonant frequency than the other series-arm resonators.

2. A surface acoustic wave filter comprising series-arm resonators and parallel-arm resonators that are connected in a ladder-like structure, each having an interdigital transducer formed on a piezoelectric substrate, and at least one of the series-arm resonators having a different static capacitance from the other series-arm resonators,

wherein at least one of the series-arm resonators except the series-arm resonator located at the first stage in the ladder-like structure has an interdigital transducer with a longer electrode finger pitch than the average of electrode finger pitches of the interdigital transducers of the other series-arm resonators.

3. A surface acoustic wave filter comprising series-arm resonators and parallel-arm resonators that are connected in a ladder-like structure, each having an interdigital transducer formed on a piezoelectric substrate, and the series-arm resonator located at the last stage having a smaller static capacitance than the other series-arm resonators,

wherein at least one of the series-arm resonators

except the series-arm resonator located at the first stage in the ladder-like structure has an interdigital transducer with a longer electrode finger pitch than the average of electrode finger pitches of the interdigital transducers of the other series-arm resonators.

4. The surface acoustic wave filter as claimed in claim 3, wherein the series-arm resonator having the interdigital transducer with the electrode finger pitch longer than the average has a greater static capacitance than the average of the static capacitances of the other series-arm resonators.

5. The surface acoustic wave filter as claimed in claim 3, wherein:

the ladder-like structure includes four stages; and

the series-arm resonator located at the third stage in the ladder-like structure has an interdigital transducer with a longer electrode finger pitch than the average of the electrode finger pitches of the interdigital transducers of the series-arm resonators located at the second and fourth stages in the ladder-like structure.

6. The surface acoustic wave filter as claimed in claim 5, wherein the static capacitance of the series-arm resonator located at the third stage in the ladder-like structure is greater than the average of the static capacitances of the series-arm resonators located at the first and second stages in the ladder-like structure.

7. The surface acoustic wave filter as claimed in claim 5, wherein

each of the electrode finger pitches of the

interdigital transducer in the series-arm resonator located at the third stage in the ladder-like structure is longer than the average of the electrode finger pitches of the interdigital transducers of the series-arm resonators located at the second and fourth stages in the ladder-like structure, by 1% or less.

8. The surface acoustic wave filter as claimed in claim 1, wherein at least one of the series-arm resonators has an interdigital transducer with electrode finger widths that are in the range of 15% to 22.5% of an electrode finger pitch.

9. The surface acoustic wave filter as claimed in claim 8, wherein the interdigital transducer with the electrode finger widths in the range of 15% to 22.5% of the electrode finger pitch has electrode fingers of uniform widths.

10. The surface acoustic wave filter as claimed in claim 8, wherein the interdigital transducer with the electrode finger widths in the range of 15% to 22.5% of the electrode finger pitch has electrode fingers of irregular widths.

11. The surface acoustic wave filter as claimed in claim 1, wherein the interdigital transducer of at least one of the series-arm resonators has dummy electrodes that are located at electrode finger non-crossing parts and do not contribute to excitation of surface acoustic wave.

12. The surface acoustic wave filter as claimed in claim 11, wherein each of the electrode finger non-crossing parts is 1.5 to 4.5 times as long as the electrode finger pitch of the interdigital transducer.

13. The surface acoustic wave filter as claimed in claim 11, wherein each of the dummy electrodes faces a top end of each corresponding electrode finger of the interdigital transducer.

14. The surface acoustic wave filter as claimed in claim 1, wherein the series-arm resonators each has reflectors located on opposite sides in the propagation direction of surface acoustic wave.

15. The surface acoustic wave filter as claimed in claim 1, wherein the interdigital transducer of each of the series-arm resonators and the parallel-arm resonators has a single electrode structure.

16. The surface acoustic wave filter as claimed in claim 1, wherein the piezoelectric substrate of each of the series-arm resonators and the parallel-arm resonators is made of 42° Y-cut X-propagation $LiTaO_3$.

17. A surface acoustic wave duplexer comprising two filters having different pass bands,

one of the two filters located on a lower frequency side comprising a surface acoustic wave filter that includes series-arm resonators and parallel-arm resonators that are connected in a ladder-like structure, each having an interdigital transducer formed on a piezoelectric substrate, and at least one of the series-arm resonators having a different static capacitance from the other series-arm resonators,

wherein at least one of the series-arm resonators except the series-arm resonator located at the first stage in the ladder-like structure has a lower average resonant frequency than the other series-arm resonators.

18. The surface acoustic wave filter as claimed in claim 2, wherein at least one of the series-arm

resonators has an interdigital transducer with electrode finger widths that are in the range of 15% to 22.5% of an electrode finger pitch.

19. The surface acoustic wave filter as claimed in claim 3, wherein at least one of the series-arm resonators has an interdigital transducer with electrode finger widths that are in the range of 15% to 22.5% of an electrode finger pitch.

20. The surface acoustic wave filter as claimed in claim 2, wherein the interdigital transducer of at least one of the series-arm resonators has dummy electrodes that are located at electrode finger non-crossing parts and do not contribute to excitation of surface acoustic wave.

21. The surface acoustic wave filter as claimed in claim 3, wherein the interdigital transducer of at least one of the series-arm resonators has dummy electrodes that are located at electrode finger non-crossing parts and do not contribute to excitation of surface acoustic wave.

22. A surface acoustic wave duplexer comprising two filters having different pass bands,

one of the two filters located on a lower frequency side comprising a surface acoustic wave filter that includes series-arm resonators and parallel-arm resonators that are connected in a ladder-like structure, each having an interdigital transducer formed on a piezoelectric substrate, and at least one of the series-arm resonators having a different static capacitance from the other series-arm resonators,

wherein at least one of the series-arm resonators except the series-arm resonator located at the first stage in the ladder-like structure has an interdigital

transducer with a longer electrode finger pitch than the average of electrode finger pitches of the interdigital transducers of the other series-arm resonators.

23. A surface acoustic wave duplexer comprising two filters having different pass bands,

one of the two filters located on a lower frequency side comprising a surface acoustic wave filter that includes series-arm resonators and parallel-arm resonators that are connected in a ladder-like structure, each having an interdigital transducer formed on a piezoelectric substrate, and the series-arm resonator located at the last stage having a smaller static capacitance than the other series-arm resonators,

wherein at least one of the series-arm resonators except the series-arm resonator located at the first stage in the ladder-like structure has an interdigital transducer with a longer electrode finger pitch than the average of electrode finger pitches of the interdigital transducers of the other series-arm resonators.